

**SYSTEM AND METHOD FOR DETERMINING GAS TURBINE FIRING  
AND COMBUSTION REFERENCE TEMPERATURES HAVING  
CORRECTION FOR WATER CONTENT IN FUEL**

**ABSTRACT OF THE DISCLOSURE**

A system is disclosed for adjusting a gas turbine firing temperature control algorithm and combustion reference temperature algorithms based on exhaust gas temperature, turbine pressure ratio and compressor discharge temperature for water content in the air entering the compressor differing from the design water content of ambient air. The water content in the ambient air is calculated by the control system from measured data from a dry bulb temperature sensor and a wet bulb temperature or humidity sensor.